## REMARKS

In further support of the Claims presented, Applicants provide the following discussion.

### JOINT INVENTORS

Applicants acknowledge their obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103 (c) and potential 35 U.S.C. 102 (e), (f) or (g) prior art under 35 U.S.C. 103 (a). Applicants assert that all the subject matter of the claims in the application was commonly owned at the time any inventions covered therein were made.

### BACKGROUND

According to the current Office Action, Claims 1-9 and 11 currently stand rejected, and the Office has stated an objection to Claims 10 and 12.

### 35 USC § 103 REJECTION OF CLAIMS 1, 7-9 AND 11

Claims 1, 7-9 and 11 stand rejected under 35 USC § 103(a) as being unpatentable over Jouppi (U.S. Patent Number 6,549,215) in view of Kreitman et al (U.S. Patent Number 5,956,000).

Regarding Claim 1, the Office says that "Jouppi discloses a video display system as recited in claim 1 with exception of describing the use of an image transformer." (Office Action, page 2, section 3, paragraph 2.) The Office further states that "Kreitman teaches transformation unit (26) transforming the data to compensate for the misalignment of the basic projector units (24). This reads on the claimed limitation "image transformer" as recited in the claim." (Office Action, paragraph 2, page 3.) Finally the Office states "Therefore, it would have been obvious to one of ordinary skill in the art at the [time] the invention was made to have used the image transformer as taught by Kreitman to the projector of Jouppi so as to avoid misalign between [the] image projected by projectors; see column 1, lines 33-45 and column 2, lines 3-30 of Kreitman."

Applicants respectfully submit that Jouppi does not disclose a video display system with all of the limitations in Applicants' Claim 1 with the exception of describing the use of an image

transformer. In particular, Jouppi does not disclose a "...video display system for displaying on a display medium an image, wherein the image comprises a first portion to be displayed at a first resolution and a second portion, **mobile with respect to the first portion**, to be displayed at a second resolution..." (Applicants' Claim 1. Emphasis added.) One of the objectives of Applicants' invention is to be able to provide enhanced resolution to a portion of a displayed image that can change with respect to position over time. In other words, the invention enhances the resolution of the portion of the image that is of interest to the viewer and this portion of interest can vary over time. Neither Jouppi nor Kreitman nor a combination of the two, disclose a first and second portion of an image where the second portion of the image is mobile with respect to the first portion. The primary thrust of this application is that Applicants' are able to move, place, bend and display the high resolution portion of the image in a continuously moving location in real time. This required significant hardware development and software/mathematical development to produce this capability. The derivation of the homogenous transforms disclosed, specifically the mirror transforms, was done to facilitate this approach. The capabilities of Applicants' invention cannot be accomplished or even approached with the cited systems.

Further, Applicants respectfully submit that it would not have been obvious to one of ordinary skill in the art at the time the invention was made to have used the image transformer as taught by Kreitman to the projector of Jouppi so as to avoid misalignment between the image projected by the projectors. Kreitman teaches the use of an image transformer to correct for misalignment between projectors that are used to display an image in a large format by using multiple projectors to each display a portion of the image and then tile them together to form a large composite image. The image transformer in Kreitman is used once prior to the display of the image to account for any misalignment in the set-up of the projectors. The image transformer disclosed by Applicants is not used to overcome a one-time misalignment between projectors. Applicants' image transformer is used to make sure, as the second portion of the image moves with respect to the first portion of the image, that the second portion of the image is properly aligned with the first portion so that the second portion is displaying an enhanced resolution image of the first portion that corresponds to the location of the second portion. Kreitman teaches the use of the image transformer to align the images as they are tiled together

to form one large image and Applicants teach the use of the image transformer to align the two images so that they overlap.

Therefore, Applicants respectfully submit that Claim 1 is in condition for allowance and the rejection should be withdrawn.

Regarding Claim 7, the rejection of this claim is overcome due to the dependency of the claim from Claim 1, which, as discussed above, is in condition for allowance.

Further, the use of homogeneous transforms in Kreitman is different then the use of homogeneous transforms in Applicants' invention as claimed in Claim 7. Applicants use the homogenous transforms to solve a harder problem than finding the changes needed for fixing the alignment of a few (N) screens (all in rigid, fixed mounting positions), which requires relatively tiny shifts, and rotations through small angles. The mathematics of the composition of several rotations through various angles, is not commutative except in the case of small angles, so Applicants solve a more general problem to allow the high resolution sub-image to be swept across large angles and across the entire extent of the larger, lower resolution image. Further, Kreitman's use of the transform and its particular parameters to align the screen edges does not have to account for a moving mirror because the apparatus in Kreitman is completely rigid.

Therefore, Applicants respectfully submit that Claim 7 is in condition for allowance and the rejection should be withdrawn.

Regarding Claim 8, the Office states that "As to claims 8-9 and 11, these claims differ from claim 1 only in that claim 1 is apparatus whereas claims 8-9 and 11 are method. Thus, method claims 8-9 and 11 are analyzed as previously discussed with respect to apparatus claim 1 above." (See Office Action, page 3, section 3, paragraph 3.) Applicants respectfully submit that Claim 8 is in condition for allowance and the rejection should be withdrawn for the same reasons as outlined above with respect to Claim 1. In particular, neither Jouppi nor Kreitman, alone or in combination, teach a method of displaying on a display medium an image, wherein the image comprises a first portion to be displayed at a first resolution and a second portion, **mobile with respect to the first portion**, to be displayed at a second resolution.

Regarding Claim 9, the rejection of these claims is overcome due to the dependency of these claims from Claim 8, which, as discussed above, is in condition for allowance. Further, as

discussed above, the transform in Applicants' Claim 9 solves a much more difficult problem than disclosed in Kreitman. Therefore, Applicants respectfully submit that Claim 9 is in condition for allowance and the rejection should be withdrawn.

Regarding Claim 11, neither Jouppi nor Kreitman, either alone or in combination, teach a method of determining an image transform for registration of first and second images to be displayed on a display medium, wherein the second image can be displayed at various locations relative to the first image by changing the configuration of a second video source, wherein the display of the first image has an associated first image plane and the display of the second image has an associated second image plane. As discussed earlier, Kreitman teaches the use of an image transform to account for misalignment in the set up of the projectors but does not teach the use of an image transform to display a second image at various locations on the display medium. Additionally, as discussed above, the transforms used and the problems solved in Applicants' application are very different from those disclosed in Kreitman. Also, Jouppi teaches the placement of a high-resolution image in a fixed and predetermined location within a lower-resolution image. Applicants' disclose a method and apparatus for placement of a high-resolution image at various locations relative to the lower-resolution image, capable of modification in real time. Therefore, Applicants respectfully submit that Claim 11 is in condition for allowance and the rejection should be withdrawn.

35 U.S.C. 103 REJECTION OF CLAIMS 2-6

Claims 2-6 stand rejected under 35 USC § 103(a) as being unpatentable over Jouppi et al (U.S. Patent Number 6,549,215) in view of Kreitman et al (U.S. Patent Number 5,956,000) and further in view of Washino et al (U.S. Patent Number 5,625,410).

Regarding Claims 2-6, the rejection of these claims is overcome due to the dependency of these claims from Claim 1, which, as discussed above, is in condition for allowance.

Further, the Office states "As to claims 2-6, note the discussion of Jouppi and [K]reitman above, Jouppi and [K]reitman do not mention a video steerer as recited in claims 2-3 including pan and tilt motion as recited in claims 5-6. In the same field of endeavor (i.e. projectors), Washino teaches cameras having functions of pan, tilt; see column 5, lines 8-11 and column 7, line 50 through column 8, line 47." (See Office Action, page 4 section 6, paragraph 2.) First,

Applicants respectfully point out that pan and tilt motion is recited in Claims 4-5, not Claims 5-6. Claim 6 refers to something completely different as will be discussed below.

Regarding Claims 2-3 the office admits that neither Jouppi nor Kreitman mention an image steerer as claimed and Applicants submit that Washino does not mention an image steerer either. Applicants' specification discloses a moveable mirror, a controllable optical transmitter, or a micro-electromechanical device as examples of an image steerer. (See specification, page 4, lines 19-20.) None of these devices or their equivalent is mentioned in any of the cited references.

Regarding Claim 6, as stated above Claim 6 does not recite any features having to do with pan and tilt motion, but instead Claim 6 recites the video display system of Claim 4, wherein the first portion comprises the entire image and wherein the second portion is a subset of the entire image. Further, Applicants submit that none of the cited references teach or suggest any of the limitations in Claim 6 and that the rejection should be withdrawn.

Therefore, Applicants respectfully submit that Claims 2-7 are in condition for allowance and the rejection should be withdrawn.

ALLOWABLE SUBJECT MATTER

Applicants acknowledge that the Office has stated that Claims 10 and 12 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicants do not want to amend the claims at this time, as Applicants believe that Claims 10 and 12 depend from claims that are in condition for allowance. However, Applicants reserve the right to amend these claims at a later time should it become necessary.

CONCLUSION

For the reasons stated, it is submitted that claims 1-12 are in condition for allowance. Reconsideration and withdrawal of the rejections and objections as to the claims is requested.

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Patent Application

Respectfully submitted,

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CERTIFICATION UNDER 37 CFR 1.8

I hereby certify that this correspondence and documents referred to herein is being facsimile transmitted to the United States Patent and Trademark Office, Fax No. (703) 872-9314 on the date shown below.

Date: 8/21/03 By: Fred A. Lewis
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